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# Improving Customer Service at the ARL MSRC

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## Abstract

*The ARL MSRC has conducted a major overhaul of its customer service process in order to better support our customer community. Users were asked what changes they would like to see and an outside consultant was brought in to take a fresh look at our customer service approach. A new methodology for providing customer service was designed to overcome known deficiencies in the previous system as well as incorporate the inputs from our users and the consultant.*

*We purchased new hardware (a Sun Fire V100) and software (Remedy 5.1 Help Desk) to implement our new customer service methodology. Our consultant advised us on how to configure and use Remedy to our best advantage. We configured Remedy with many features to allow the staff to take direct ownership of a user problem report, track recurring questions, and follow the tickets through until an acceptable solution has been found. One major change is that now the majority of the staff is using Remedy instead of just the front-line Help Desk. The consultant motivated the staff on the importance of providing quality customer service.*

*This new approach to customer service became operational in May 2003. Since then we have collected various statistics on the types of problem users are encountering so we can improve our center. We use this information, along with customer and staff feedback, to continue improving the system to meet our customer's requirements.*

## 1. Overview

Over the past two years, the ARL MSRC has undergone a major transformation in the way we perform customer service. We recognized that the old process was flawed, and needed changes. The customers are the most important part of a major High Performance Computing center such as ARL. Without them, the systems would sit idle and waste taxpayer money. With them, cutting-edge research is being performed daily to better equip the US

soldier. The ARL MSRC is committed to helping researchers and scientists compute more efficiently and to limit the amount of downtime they incur as a result of system or application failures. We realize our customers have alternatives for performing their computing elsewhere and we strive to make every customer's interaction with us, from account setup to job submission, as easy and effective as possible.

The goals of this transformation in customer service are to provide better overall service to the customer when they contact us, either through email, the web, or a phone call. We want to make sure everyone is satisfied with the first answer they receive, and that they receive a correct solution in a timely manner. We want to be proactive and resolve as many issues as we can before the customer even notices that something may have gone wrong. The customer should notice an improvement in the turn-around time when a help request is submitted, as well as a reduction in the number of times they have to ask for help because of improved processes on our end.

Customers have always been able to submit problem reports via e-mail, the Web, or by phone. That is still true, but how these are handled now is very different. Previously, the web interface was just a glorified formatting engine that generated an e-mail to our support staff. When an e-mail was sent to the 'msrchelp@arl.army.mil' e-mail alias, twenty-seven different staff people received it. This sometimes resulted in duplication of work since multiple people could work on the same ticket, or staleness since some groups would assume other groups or individuals would be handling a certain ticket. There was no standard process for keeping accurate records since the only group interacting with Remedy was the first tier Help Desk. Sometimes no one responded right away and other times multiple people did, showing that we were not very coordinated. If customers were to again become the priority of the ARL MSRC, this process would have to change and become much more organized.

The ideas first presented for improvement came in an internal white paper written by Mr. Steve Thompson, Customer Service team leader. It was decided that while we were currently using the Remedy Helpdesk system to record some information about incoming requests, it was not being used anywhere near its full potential. We also wanted to limit the number of e-mails that our staff was receiving so there would not be duplicate work taking place, and they would not have to read about issues unrelated to their specialized area. We wanted to make sure our staff took ownership of the tickets as they arrived and worked to solve them in a timely manner. We also wanted to give the customer the opportunity to check on the status of his or her ticket through the web.

## 2. Developing a Solution

In developing a new solution to improve customer service at the ARL MSRC, it was decided that a complete overhaul of the hardware and software was needed. The server was upgraded from an old Sun Enterprise 3000 to a new Sun Fire V100. Oracle was installed as the backbone database system on the server during the setup process. It was decided that an upgrade from an earlier version of Remedy's Action Request System was needed to take advantage of the latest features. Remedy's Action Request System 5.1 was installed and configured over a period of about four months before its final production release was made. The configuration was based on Remedy's Help Desk System component with major modifications to suit the needs of a large HPC center instead of a generic customer service site.

A major part of the configuration of the new Help Desk system was the development of a scheme that classified tickets in such a way that made the routing of a ticket automatic and the general information about a ticket available at a glance. The classification scheme consists of a Category, Type, Item, Service and Summary (CTISS) that allow the aforementioned routing and quick assessment of a ticket possible. In addition, each CTISS has a set priority, assignment group, contact time and resolution time associated with it. This scheme was developed by our customer service team in conjunction with an outside consultant, Mr. Joel Ramseyer of The Diagonal Group.

Once the classification scheme was decided upon, configuration and development of the Help Desk system in Remedy was initiated. The development and configuration of this system took approximately six weeks of dedicated work. Many of the features Remedy shipped with their Help Desk configuration were not useful and were removed. The remaining features were modified to work with the process flow that was being created. The system was configured in such a way as to

allow for the storage of ticket resolutions for future use and the ability to link related tickets so our staff only has to solve the problem once to propagate a valid resolution to all interested parties.

Part of the configuration of Remedy was the development of a web interface that allows customers to not only submit their problem via the web, but also to classify the tickets. By classifying the problem into a CTISS, Remedy is then able to route the ticket to the correct team at the ARL MSRC. The web development is based on Remedy's Action Request System web interface technology and it allows direct submission of new tickets into Remedy. In addition to submitting tickets online, customers were also given the capability to review their submitted tickets online. To enforce security on information about their submitted tickets, a wrapper for the page was integrated, with modifications, to meet the ARL MSRC needs. The wrapper to authenticate customers using Kerberos and SecurID was written by Mr. Vern Staats at the ASC MSRC and has proven to work extremely well in this environment.

Once the development and configuration of the client system and the ticket classification scheme were complete, members of different teams at the ARL MSRC tested the system by creating sample tickets and trying to find ways to disrupt the process flow. Once the bugs that this testing uncovered were fixed, the system was run in parallel with the existing Help Desk system to see if any discrepancies existed that were not found during the previous test runs. Several more issues were found and corrected over several weeks. Then it was determined that the new system was sufficiently stable to support a production environment. The web interface took longer to develop and implement because of security issues. The testing of this tool included several beta testers from the customer community submitting and reviewing tickets until this was deemed stable as well.

## 3. Implementation

Once all the development work was completed, the next step was to train our entire local staff on how to use the new Help Desk system and what the new customer service process was to ensure timely and accurate resolutions to problems. A presentation was given to our staff as to why the changes were made, how the new process works, and what would be expected from them. This included a step-by-step walkthrough of how to interact with Remedy, what it is capable of doing, and what must be done to ensure that there would be accountability for each ticket, by either a team or an individual.

As mentioned earlier, the old Help Desk system and the new Remedy system were run in parallel for several

weeks. This was done to ensure the new system was responding properly and to have a backup in case of a catastrophic failure, which fortunately never happened. The old system was then phased out and all the old records archived and moved into the new Remedy system in case any historical data was needed in the future.

As the old system was phased out, and the new system was being phased in, the initial web interface for submitting tickets was rolled out. All current ARL MSRC customers were informed of the improvements in the customer service process. Later, as the interface to review tickets was completed and the security features were thoroughly tested, the new interface was rolled out on the site. The original e-mail had made note that this feature was coming. It was linked below the submission link on the ARL MSRC Customer Service main web page, and began receiving hits that day.

#### 4. Noted Improvements

Our complete customer service overhaul produced several benefits. All web-based ticket submissions are automatically routed to the team that is best suited for the problem based on the CTISS entered. If no CTISS is entered, or the ticket is submitted using e-mail or a phone call, our first-level Help Desk will categorize the ticket as it is entered into the system, and the ticket will be routed from there. This way, only the right staff people are notified, and others do not waste time reading about problems unrelated to their work.

Tickets migrate through various stages as they are worked. A ticket is considered 'Assigned' once it is in the Remedy system and assigned to a team. Once a team acknowledges that they are the proper team to work on a ticket, it is placed in an 'Accepted' status. When a ticket is being actively worked, there is a 'Work In Progress' status that lets other members of the team know who is actively working the issue. A 'Research' status indicated that there is some outside factor preventing this ticket from being actively worked, such as waiting for a vendor or customer response. When the individual working the ticket believes it is fixed, he places it in a 'Resolved' status and Remedy provides a convenient mechanism for him to compose a resolution e-mail to the customer. When a customer is satisfied that the resolution is accurate and complete, he or she can 'Close' the ticket. If not, the customer can re-open the ticket. If no response is received within one week, Remedy automatically closes tickets in the 'Resolved' state.

To ensure that these rules are followed, there is a limit as to how long a ticket can be placed into a 'Research' status, and reminders are e-mailed to team members if a ticket goes unaccepted for a specific period of time. If a ticket is not resolved in a timely manner, it is

escalated to team leaders and management to let them know that there has been a delay in the process somewhere along the line. The front-line Help Desk has responsibility to check periodically on stale and 'Research' tickets to ensure that they have not been forgotten and that a resolution is being worked on.

The new Help Desk system and processes have been in place for over a year now. In the year of data available at this writing (May 2003 through April 2004), there have been periods of improvement and periods that did not meet our expectations. From its inception last May through the fall, our overall success rate in resolving tickets on time met or exceeded our goal of 95%. As this period progressed, tickets were broken down by priority and by team to see where improvements were still needed. Over time we also tweaked the system for more realistic expectations and to correct routing flaws. By not understanding explicitly how certain processes worked, the resolution time for some types of tickets were not achievable and needed to be modified. Over the winter, we failed to meet our goals because of some staff shortages which have since been addressed. Since new members have joined our staff and come up to speed on our procedures, our ticket resolution rates are improving. For April 2004, only one request for help from a customer was not responded to in a timely manner.

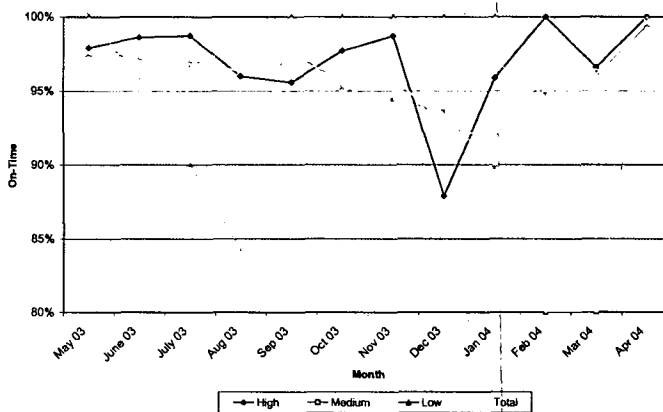


Figure 1. On-Time Ticket Resolutions

Currently we feel the new process that has been developed is working, and customer service has improved. During April, we reached an on-time ticket resolution rate of 99.6%, our best thus far. While still searching for a perfect month resolving customer problems, steps have been taken to keep the number of tickets not resolved on-time as low as possible. New members have been added to the first-level Help Desk team, and the Application Support team. Also, since new software installations and upgrades have been a persistent problem, we hired a dedicated software install engineer to coordinate and perform the installations. This should

reduce the number of low priority tickets that are not resolved in a timely manner.

## **5. Future Plans**

For the future, the ARL MSRC is researching the latest incarnation of the Remedy Action Request system, version 6.0. It is anticipated that there will be an upgrade this year to that version once some of the initial bugs are worked out and it appears to be stable enough for our production environment. An upgrade of the Remedy system would not require a complete re-implementation at this point, but it would require another phase of testing and possibly some new development to take advantage of the latest features.

In addition to the upgrade of the Remedy environment, there are new features which are currently being implemented, tested and considered. Development is continuing on a set of tools to gather the metrics needed to make accurate judgments about how our customer service team is doing under this new process. Also under consideration is a new feature for the web-based system

which will pop-up a 'canned' solution if certain conditions are met. The new Remedy 6.0 environment will offer more new features which may make more enhancements possible.

Outside of the Help Desk environment, our Customer Service team is busy spending their available time working on solutions that will help to prevent problems from occurring, or let us know when problems occur so we can fix them before they are noticeable to the customers. One of these projects is to improve our script generator tool GEST to support more commercial-off-the-shelf (COTS) packages and the LSF queuing system. We are also working on having modules available on all systems for all COTS packages and system tools. These tools will allow for easier interaction with the system so that the influx of new architectures and a new queuing system are not as troublesome as they otherwise would be. In addition, we are revamping our website to give it an updated look and to better organize the information so that user guides, documentation and other frequently accessed data is easier to find.